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ABSTRACT OF THE DISCLOSURE

Apparatuses and methods are disclosed for determining the alignment of leads on components. Physical and/or
5 superficial fiducial markers on components are used to distinguishes the alignment of leads on the component. The alignment of fiducial markers on the component are detected. A predetermined fiducial alignment is provided that corresponds to a predetermined lead alignment. The detected
10 fiducial alignment is compared to a predetermined fiducial alignment to determine the lead alignment. When used in conjunction with a pick and place machine, the methods and apparatuses provide a means for verifying and correcting the lead alignment of components prior to placement and
15 ~~attachment to a substrate.~~

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